

IN THE CLAIMS

Claims 1-5 (canceled)

Claim 6 (currently amended) A substrate cleaning apparatus for cleaning a substrate, comprising:

a substrate cleaning bath to contain therein a substrate cleaning liquid comprising at least one liquid selected from a first group consisting of an aqueous solution of ammonium fluoride and a mixture of an aqueous solution of ammonium fluoride and hydrofluoric acid;

a substrate carrier for holding the substrate when dipping the substrate in the substrate cleaning bath;

measuring means for measuring characteristics of said cleaning liquid in said substrate cleaning bath, the characteristics being relative to the hydrofluoric acid concentration of said cleaning liquid;

fluid feeding means for feeding at least one fluid selected from a second group consisting of ammonia and aqueous ammonia from a fluid source to said substrate cleaning bath;

a circulation system configured to circulate said cleaning liquid from the substrate cleaning bath, through said measuring means, and back to said substrate cleaning bath during cleaning of the substrate in the substrate cleaning bath; and

control means for arithmetically processing a signal from said measuring means while during cleaning [[a]] of the substrate in the substrate cleaning bath to control the feeding of the fluid from said fluid source to the substrate cleaning bath by way of said fluid feeding means during cleaning of the substrate in the substrate cleaning bath.

Claim 7 (canceled)

Claim 8 (previously presented) The substrate cleaning apparatus according to Claim 6, wherein said measuring means comprises means for measuring at least one wavelength characteristic selected from the group consisting of an absorbance at a

predetermined wavelength, an infrared absorption spectrum, an ultraviolet absorption spectrum, and an index of refraction.

Claim 9 (previously presented) The substrate cleaning apparatus according to Claim 6, wherein said measuring means comprises means for measuring at least one physical value selected from the group consisting of a specific gravity and a transmittance.

Claim 10 (previously presented) The substrate cleaning apparatus according to Claim 6, wherein said measuring means comprises means for measuring an electric conductivity.

Claim 11 (previously presented) The substrate cleaning apparatus according to Claim 6, wherein said measuring means comprises at least one measurement means selected from the group consisting of a moisture titrator and liquid (ion) chromatography.

Claim 12 (previously presented) The substrate cleaning apparatus according to Claim 6, wherein said measuring means measures hydrofluoric acid concentration of said cleaning liquid.

Claim 13 (original) The substrate cleaning apparatus according to Claim 12, wherein said measuring means comprises means for measuring at least one wavelength characteristic selected from the group consisting of an absorbance at a predetermined wavelength, an infrared absorption spectrum, an ultraviolet absorption spectrum, and an index of refraction.

Claim 14 (withdrawn) The substrate cleaning apparatus according to Claim 12, wherein said measuring means comprises means for measuring at least one physical value selected from the group consisting of a specific gravity and a transmittance.

Claim 15 (withdrawn) The substrate cleaning apparatus according to Claim 12, wherein said measuring means comprises means for measuring an electric conductivity.

Claim 16 (withdrawn) The substrate cleaning apparatus according to Claim 12, wherein said measuring means comprises at least one measurement means selected from the group consisting of a moisture titrator and liquid (ion) chromatography.

Claim 17 (canceled)

Claim 18 (currently amended) A substrate cleaning apparatus for cleaning a substrate, comprising:

- a substrate cleaning bath to contain therein a substrate cleaning liquid comprising at least one liquid selected from a first group consisting of an aqueous solution of ammonium fluoride and a mixture of an aqueous solution of ammonium fluoride and hydrofluoric acid;

- a substrate carrier for holding the substrate when dipping the substrate in the substrate cleaning bath;

- measuring means for measuring hydrofluoric acid concentration of the cleaning liquid in said substrate cleaning bath;

- a fluid source comprising at least one fluid selected from a second group consisting of ammonia and aqueous ammonia;

- fluid feeding means for feeding the fluid from said fluid source to said substrate cleaning bath;

- a circulation system configured to circulate said cleaning liquid from the substrate cleaning bath, through said measuring means, and back to said substrate cleaning bath during cleaning of the substrate in the substrate cleaning bath; and

- control means for processing a signal from said measuring means during cleaning of the substrate in the substrate cleaning bath to control the feeding of the fluid from said fluid source to the substrate cleaning bath by way of said fluid feeding means during cleaning of the substrate in the substrate cleaning bath.

Claim 19 (previously presented) The substrate cleaning apparatus according to Claim 18, wherein said measuring means is adapted to measure at least one wavelength characteristic selected from a group consisting of an absorbance at a predetermined wavelength, an infrared absorption spectrum, an ultraviolet absorption spectrum, and an index of refraction.

Claim 20 (withdrawn) The substrate cleaning apparatus according to Claim 18, wherein said measuring means is adapted to measure at least one physical value selected from a group consisting of a specific gravity and a transmittance.

Claim 21 (withdrawn) The substrate cleaning apparatus according to Claim 18, wherein said measuring means is adapted to measure an electrical conductivity.

Claim 22 (withdrawn) The substrate cleaning apparatus according to Claim 18, wherein said measuring means comprises at least one measurement means selected from a group consisting of a moisture titrator and liquid chromatography.